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W/C
1. (Once Amended) An isolated polypeptide selected from the group consisting of:
- a) a polypeptide comprising the amino acid sequence of SEQ ID NO:1,
  - b) a polypeptide comprising a naturally occurring amino acid sequence at least 95% identical to the amino acid sequence of SEQ ID NO:1, wherein the polypeptide has adenylate kinase activity, and
  - c) a fragment of a polypeptide having the amino acid sequence of SEQ ID NO:1, wherein the fragment has adenylate kinase activity, and wherein the fragment comprises residues R6 through V23 of SEQ ID NO:1.

3. An isolated polynucleotide encoding a polypeptide of claim 1.

9. A method for producing a polypeptide of claim 1, the method comprising:

- a) culturing a cell under conditions suitable for expression of the polypeptide, wherein said cell is transformed with a recombinant polynucleotide, and said recombinant polynucleotide comprises a promoter sequence operably linked to a polynucleotide encoding the polypeptide of claim 1, and
- b) recovering the polypeptide so expressed.

10. A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:1.

17. A composition comprising a polypeptide of claim 1 and a pharmaceutically acceptable excipient.

18. A composition of claim 17, wherein the polypeptide has an amino acid sequence of SEQ ID NO:1.

20. A method for screening a compound for effectiveness as an agonist of a polypeptide of claim 1, the method comprising:

- a) exposing a sample comprising a polypeptide of claim 1 to a compound, and
  - b) detecting agonist activity in the sample.
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56. (New) An isolated polypeptide comprising the amino acid sequence of SEQ ID NO:1.

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57. (New) An isolated polypeptide of claim 1, wherein the polypeptide comprises a naturally occurring amino acid sequence at least 95% identical to the amino acid sequence of SEQ ID NO:1, and wherein the polypeptide has adenylate kinase activity.

58. (New) An isolated polypeptide of claim 1, wherein the polypeptide is a fragment of a polypeptide having the amino acid sequence of SEQ ID NO:1, and wherein the polypeptide has adenylate kinase activity, and wherein the polypeptide comprises residues R6 through V23 of SEQ ID NO:1.

59. (New) A composition comprising the polypeptide of claim 56 and a pharmaceutically acceptable excipient.

60. (New) A composition comprising the polypeptide of claim 57 and a pharmaceutically acceptable excipient.

61. (New) A composition comprising the polypeptide of claim 58 and a pharmaceutically acceptable excipient.

62. (New) A method of screening a compound for effectiveness as an antagonist of a polypeptide of claim 1, the method comprising:

- a) exposing a sample comprising a polypeptide of claim 1 to a compound, and
- b) detecting antagonist activity in the sample.

63. (New) A method of screening for a compound that specifically binds to the polypeptide of claim 1, the method comprising:

a) combining the polypeptide of claim 1 with at least one test compound under suitable conditions, and

b) detecting binding of the polypeptide of claim 1 to the test compound, thereby identifying a compound that specifically binds to the polypeptide of claim 1.

64. (New) A method of screening for a compound that modulates the activity of the polypeptide of claim 1, the method comprising:

a) combining the polypeptide of claim 1 with at least one test compound under conditions permissive for the activity of the polypeptide of claim 1,

b) assessing the activity of the polypeptide of claim 1 in the presence of the test compound, and

c) comparing the activity of the polypeptide of claim 1 in the presence of the test compound with the activity of the polypeptide of claim 1 in the absence of the test compound, wherein a change in the activity of the polypeptide of claim 1 in the presence of the test compound is indicative of a compound that modulates the activity of the polypeptide of claim 1.

65. (New) A method of preparing a polyclonal antibody which specifically binds to the polypeptide of claim 1, the method comprising:

a) immunizing an animal with a polypeptide consisting of the amino acid sequence of SEQ ID NO:1, or an immunogenic fragment thereof, under conditions to elicit an antibody response,

b) isolating antibodies from the animal, and

c) screening the isolated antibodies with the polypeptide of claim 1, thereby identifying a polyclonal antibody which specifically binds to the polypeptide of claim 1.

66. (New) A method of making a monoclonal antibody which specifically binds to the polypeptide of claim 1, the method comprising:

a) immunizing an animal with a polypeptide consisting of the amino acid sequence of SEQ ID

NO:1, or an immunogenic fragment thereof, under conditions to elicit an antibody response,

- b) isolating antibody producing cells from the animal,
- c) fusing the antibody producing cells with immortalized cells to form monoclonal antibody-producing hybridoma cells,
- d) culturing the hybridoma cells, and
- e) isolating from the culture monoclonal antibody which specifically binds to the polypeptide of claim 1.

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cont

67. (New) A method of detecting the polypeptide of claim 1 in a sample, the method comprising:

- a) incubating an antibody which specifically binds to the polypeptide of claim 1 with the sample under conditions to allow specific binding of the antibody and the polypeptide, and
- b) detecting specific binding, wherein specific binding indicates the presence of the polypeptide of claim 1 in the sample.

68. (New) A method of purifying the polypeptide of claim 1 from a sample, the method comprising:

- a) incubating an antibody which specifically binds to the polypeptide of claim 1 with the sample under conditions to allow specific binding of the antibody and the polypeptide, and
  - b) separating the antibody from the sample and obtaining the purified polypeptide of claim 1.
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